

**REMARKS**

Claims 1 to 12 are pending. Claims 1 and 2 are currently amended. Support of the amendments can be found, for example, on page 8, lines 19-30 and on page 10, lines 11-23 of the specification as filed. Reconsideration of the application is requested.

**§ 102 Rejections**

Claim 1 stands rejected under 35 USC § 102(e) as purportedly being anticipated by Oka (US 6551906 B2). The Examiner states that regarding claim 1, Oka teaches a semiconductor surface protecting method whereby the circuit side of a semiconductor wafer is protected during the step of back side grinding of the wafer (Oka, col. 2, lines 55-65), comprising (Figure 1B) joining the circuit side (front surface [surface at which semiconductor[s] elements are found], col. 2, lines 35-39) of said semiconductor wafer (wafer, 1) to a polymeric film material (tape substrate, 21) via a fluid surface protecting layer (adhesive, 22) which hardens upon radiation exposure (UV light) and hardening said surface protecting layer (Oka, col. 3, lines 35-35). The Examiner further states that UV-curing resin in the protective tape would necessitate the use of radiation exposure (UV light) to harden. The Examiner also states that UV curing resin would have to be fluid in order to be placed onto the circuit side of the wafer.

The Applicant respectfully traverses this rejection for at least the following reasons. The Applicant has amended claim 1 to add the step of “grinding said wafer, wherein grinding said wafer is done after hardening said surface protecting layer.” The Examiner has not shown that Oka teaches grinding said wafer after hardening said surface protecting layer. Oka teaches (see, for example, col. 3, lines 35-66) that the protective tape 2 for back grinding is adhered to the front surface of the wafer (Fig. 1B). Then, the wafer is cut (subjected to back grinding process) (Fig. 1C). Finally, (Fig. 1E) “the protective tape 2 for back grinding is peeled off after being irradiated with UV light.” Oka does not teach that the wafer is ground after hardening the surface protecting layer. For at least this reason, the Examiner has not shown that Oka teaches all of the limitations of Applicant’s amended claim 1. Thus, the Examiner has not shown that Oka teaches all of the elements of Applicant’s amended claim 1. For at least this reason, the rejection of claim 1 under USC 102(e) is unwarranted and should be withdrawn.

The rejection of amended claim 1 under 35 USC § 102(e) as purportedly being anticipated by Oka (US 6551906 B2) has been overcome and should be withdrawn.

### **§ 103 Rejections**

Claims 2 and 3 stand rejected under 35 USC § 103(a) as purportedly being unpatentable over Oka (US 6551906 B2) in view of Morita et al. (5516858). The Examiner states that Oka does not teach a surface protecting sheet having a polymeric film material which is solid at room temperature. The Examiner is relying on Morita for that teaching.

On page 4 of the Office Action of September 19, 2008, the Examiner states that "...one with common knowledge in the art would know that UV curing resin would have to be fluid in order to be placed onto the wafer and this is generally done via heating." The Applicant would respectfully like the Examiner to point out where it is known that placing a UV curing resin on the wafer is generally done by heating (emphasis added). The Applicant is not aware that this is general knowledge.

With respect to claim 2, the Applicant has amended claim 2 to add the step of "grinding said wafer, wherein grinding said wafer is done after hardening said surface protecting layer." The Applicant has argued above that the Examiner has not shown that Oka teaches or suggests a semiconductor protecting methods that includes the steps of hardening the surface protecting layer followed by grinding of the wafer. Morita does not add the missing element. For at least this reason, the rejection of amended claim 2 under 35 USC § 103(a) as purportedly being unpatentable over Oka in view of Morita et al. is unwarranted and the Applicant respectfully requests that it be withdrawn.

With respect to amended claim 2 and claim 3, the Examiner has stated that Oka does not teach a surface protecting sheet having a polymeric film material which is solid at room temperature. The Examiner is relying on Morita for that teaching. The Examiner admits that Morita teaches a curable resin, used for protective coatings, with a main component (component A) which can be a UV-curing resin which may be a liquid or solid at room temperature (col. 3, lines 51-57 or Morita). It is the Examiner's position that the addition of a UV curing resin would allow for greater versatility, since it can be in either a liquid or solid state at room temperature. The Examiner further states that if in a solid state then this would necessitate the need to, first

heat, and then apply a semiconductor surface since this is the manner in which UV curing resins are applied and that it would have been obvious to one of ordinary skill in the art at the time of the invention to append the teaching of Morita to the teachings of Oka since this would add flexibility to the fabrication process.

The Applicant respectfully traverses this rejection for at least the following reasons. The Examiner has admitted on page 4 of the Office Action that Oka does not teach a surface protecting sheet having a polymeric film material which is solid at room temperature. The Applicant wishes to point out that a surface protecting layer and a surface protecting sheet are separate and distinct elements in claims 2 and 3. (emphases added) The Examiner has not shown that Morita teaches or suggests a surface protecting sheet. Additionally, the Examiner's Office Action of September 19, 2008 does not disclose where Morita teaches or suggests such a surface protecting sheet. Rather the Examiner suggests that Morita teaches a curable resin, used for protective coatings. The surface protecting sheet in Applicant's claims 2 and 3 comprises a polymeric film material on which is formed a surface protecting layer. The Examiner has not shown that Morita teaches such a feature. For at least these reasons, the Applicant's position is that the Examiner has not shown where the combination of Oka and Morita teach or suggest all of the limitations of Applicant's claim 2 or 3. The Applicants assert that the Examiner has not made a *prima facie* case of obviousness and for this reason the rejection of claims 2 and 3 is improper and should be withdrawn.

Additionally, the Examiner has not shown that the combination of Oka and Morita teach or suggest a surface protecting sheet comprising a polymeric film material on which is a surface-protecting layer which is solid at room temperature, becomes fluid upon heating and hardens upon exposure to radiation or upon heating to a temperature higher than the fluidizing temperature. The Examiner has already admitted that Oka does not teach a surface protecting sheet having a polymeric film material which is solid at room temperature. However if, for the sake of argument without making any admission, the Examiner might consider the protective tape 2 which is formed by the tape substrate 21 and adhesive 22 to be a surface protecting sheet (see col. 3, lines 35-26 of Oka), the Examiner has not shown that adhesive 22 is a solid at room temperature, becomes fluid upon heating and hardens upon exposure to radiation or upon heating to a temperature higher than the fluidizing temperature. (emphasis added) According to Oka

(col. 3, lines 44-45), “A tacky resin, a UV-curing resin, or a thermoplastic resin may be used for the adhesive 22. If adhesive 22 is a UV-curing resin then the Examiner has not shown that Oka teaches or suggests that the resin is a solid at room temperature. The fact that 22 is considered an adhesive and one of ordinary skill in the art would know that adhesives have viscoelastic properties meaning that there is a flow or fluid component (hence, “visco”) indicates that this resin is not a solid at room temperature. Furthermore, Oka does not teach or suggest that the UV-curing resin becomes fluid upon heating. The same is true if adhesive 22 is a tacky resin. If, on the other hand, adhesive 22 is a thermoplastic resin, then thermoplastic resins, by definition, do not set or crosslink or “harden” upon heating. They become liquid above their melting point and resolidify upon cooling below that point. As a result, adhesive 22 does not meet the limitations of amended claims 2 or claim 3 with respect to the element of a surface protecting sheet. Morita does not add the missing surface protecting sheet. For these reasons, the Examiner has not shown that the combination of Oka and Morita teach all of the limitations of Applicant’s amended claim 2 and claim 3. For at least this reason the Examiner has not made a *prima facie* case of obviousness and the Applicant respectfully requests that the rejections be withdrawn.

Claims 4, 5, 6, 9, and 10 stand rejected under 35 U.S.C. 103(a) as purportedly unpatentable over Oka (US 6551906) in view of Morita et al. (5516858), in further view of Hosomi et al. (5726219). The Applicant respectfully traverses these rejections for at least the following reasons. Claims 4, 5, 6, 9, and 10 all ultimately depend upon independent claim 3 and add further limitations thereto. As pointed out above, the combination of Oka and Morita does not teach all of the limitations of Applicant’s claim 3 since the Examiner has admitted that Oka does not teach a surface protecting sheet and the Examiner has not shown that Morita adds this missing element. The Examiner states that Hosomi teaches a resin which can be utilized as the surface protecting layer. But Hosomi does not add the required element of a surface protecting sheet as required by Applicant’s claims. (emphasis added) The combination of Oka, Morita, and Hosomi do not teach such an element and as such, the Examiner has not made a *prima facie* case of obviousness and the rejections are improper. For this reason, the Applicant respectfully requests that the rejections of claims 4, 5, 6, 9, and 10 under 35 U.S.C. 103(a) as purportedly

unpatentable over Oka (US 6551906) in view of Morita et al. (5516858), in further view of Hosomi et al. (5726219) are improper and should be withdrawn.

Claims 7 and 8 stand rejected under 35 U.S.C. 103(a) as purportedly being unpatentable over Oka (US 6551906) in view of Morita et al. (5516858) in further view of Komiyama et al. (5118567). The Applicant respectfully traverses these rejections for at least the following reasons. Claims 7 and 8 ultimately depend upon and add further limitations to claim 3. The Applicant has already shown that the Examiner has not made a *prima facie* case of obviousness of claim 3 over Oka in view of Morita. For example, the Examiner has not shown that the combination of Oka and Morita teaches or suggests a surface protecting sheet. The Examiner has stated that Komiyama teaches the use of an adhesive tape which is composed of phenol-novolac epoxy resin. But the Examiner has not shown that Komiyama teaches or suggests the missing element of a surface protecting sheet. As such, the Examiner has not made a *prima facie* case of obviousness of claims 7 and 8. For at least this reason, the Applicant respectfully asserts that the rejections of claims 7 and 8 under 35 U.S.C. 103(a) as purportedly being unpatentable over Oka (US 6551906) in view of Morita et al. (5516858) in further view of Komiyama et al. (5118567) are improper and should be withdrawn.

Claims 11 and 12 stand rejected under 35 U.S.C.103(a) as purportedly being unpatentable over Oka (US 6551906) in view of Morita et al. (5516858) in further view of Hosomi et al. (5726219) in further view of Komiyama (5118567). Claims 11 and 12 ultimately depend upon claim 3 and add further limitations thereto. The Applicant has already stated that the Examiner has not shown that the combination of Oka, Morita and Hosomi does not teach all of the elements of Applicant's claim 3. Also, the Applicant has already stated that the Examiner has not shown that the combination of Oka, Morita, and Komiyama teaches all of the elements of Applicant's claim 3. Therefore, the combination of Oka, Morita, Hosomi, and Komiyama cannot teach all of the elements of Applicant's claim 3. As a result the Examiner has not made a *prima facie* case of obviousness and the Applicant respectfully requests that the rejection of claims 11 and 12 under 35 U.S.C.103(a) as purportedly being unpatentable over Oka (US 6551906) in view

of Morita et al. (5516858) in further view of Hosomi et al. (5726219) in further view of Komiyama (5118567) is improper and should be withdrawn.

### **Telephonic Interview**

The Applicant wishes to thank Examiner Caleb Henry for the telephonic interview of December 9, 2008 in which the merits of the case were discussed. The Examiner explained that, with respect to the 102(e) rejection of claim 1, he was interpreting the fluid surface protecting layer which hardens upon radiation exposure to be adhesive 22 in col. 3, lines 35-46 of Oka. With respect to the 103(a) rejection of claims 2 and 3 over Oka in view of Morita, the Applicant respectfully pointed out that the Examiner has admitted on the record that Oka does not teach a surface protecting sheet having a polymeric film material which is solid at room temperature. The Applicant respectfully pointed out that Morita does not teach or suggest the missing element. The Examiner admitted that there might be a problem with the rejection and agreed to take a look at it upon submission of this response.

In view of the above, it is submitted that the application is in condition for allowance.

Examination and reconsideration of the application as amended is requested.

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Respectfully submitted,

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Date

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